Mihai Nadin. The Architecture of Thought, in *Living* (Architecture for the Third Millennium), 2/95. Cologne: Halem Verlag, pp. 20-22

The university is dying. No, this is not a case of "The university is dead. Long live the university," because in no way is the new university a continuation of the old model with a new face. What is happening in the university, and with learning in general, represents a discontinuity similar to a revolution. It is high time to understand the new aspects of knowledge dissemination, as well as to develop and implement them. That's why a new architecture is important in the first place. But first the classical notion of a university has to be demolished. The following paragraphs will explain why.

The academy, based on the School of Athens, served as the archetype for learning. There, Socratic dialog – the encounter of individuals on equal footing – was the basis of all education. The structure of the university stands in contrast to this model. When constituting the university, medieval western culture applied a structure that through its architecture embodied the cognitive aspects that contributed to the very establishment of the university. Since the 12th century, the same syllabi – courses in the seven fine arts, philosophy, and theology – have been taught throughout the Western world. If any modification was made, this was applied to subject matter, but not the structure itself. Today's university still bears the stamp of hierarchy and centralism. It passively assumes the attitude that all knowledge is permanent and can be transmitted to posterity in a sequential and linear fashion. At the same time, the university renounced the characteristics that mark the eternal struggle for truth: interactivity, empiricism, individuality, pragmatism, rationality, openness.

In the light of new exigencies and new ways of meeting them, these attitudes no longer serve the university or society. Today's knowledge bears the mark of a new and different dynamics. Centrality (of power, thought, science) is replaced by dynamically distributed nodes of interaction. The verticality of hierarchy gives way more and more to horizontal, reciprocal human interaction. Determinism, which consisted of a clear relation between cause (e.g., better instruction) and effect (e.g., the student's future effectiveness), lost its predictive ability long ago. Each day, people become aware of non-deterministic processes. We live with non-linearity. We discover that chaos is necessary for creativity. We know that knowledge is relative, that eternity is becoming shorter and shorter, that instruction must provide for feedback and review, and that we will have to study all our lives.

Where is the university that displays any awareness of this state of affairs? Where is the university that replaces the industrial model of education with the active collaboration of students and teachers? Where is the university that reflects the fact that today knowledge is more "computational"? Architects have not yet drawn up blueprints for this university. Neither have education experts nor policy-makers given it any thought.

Information matrix

People live more and more in an information matrix, in which they are able both to work and to study. Fast networks, centers of multimedial input and distribution of knowledge, improved interfaces, and, above all, more possibilities to carry on and optimize human interaction should go into the blueprints for the new architecture. The Socratic ideal of one-to-one dialog is probably easier to attain today than during any other time – not by erecting walls and other architectural elements, but by investigating the architecture of the human mind and its potentiality.

Just as distributed forms of praxis increasingly affect our lives, the new architecture should assure that in the future, each person will have the opportunity to study throughout his/her life. In view of this, it becomes incumbent upon educators to complement centralized places of learning with an

appropriate space for learning in our living and working places. In addition to abandoning old structures, the new university must have an architecture that is be transparent. This means that individuals will be able to know what lies behind their learning, the sources of all information that reaches them. It must be dynamically guided by the needs and characteristics of the studying individual. It must be open to interaction and reflect the global condition of human existence. These are the characteristics going into the research project entitled SOPHIA – Digital Dissemination of Knowledge, which is being carried on within the framework of the Computational Design Program at the University of Wuppertal.

Formative structures

Social formative forces are not abstract. Religious dogma, scientific information (data), social expectations – these and more are expressed in the architecture of their structures, through which they make a visible impression. If architecture can be considered a medium, it can also be considered as formative. The correspondence between built architecture and idea is alluded to in the metaphor "Buildings for Thought" (Gedankengebäude).

Whoever prefers to continue along the line of the medieval university, now or in the future, has yet to find a valid model for doing so. Medieval and populist metaphors still determine the physical architecture of colleges, as well as the structure of the administration, and, to all appearance, the notion of knowledge dissemination in general. Is this the way to go?

The disciplines making up today's science, technology, and humanities seem incapable of presenting society with an image of their mission. Architects, artists, and designers, who are among the people able to visualize ideas and who belong to professions with some scientific elements, can make their specific contribution to the new forms that education and learning are taking. There are cases in which information cannot be expressed through the spoken and printed word. Visualization through images or symbols is more reliable. Context is the decisive arbiter is such cases.

Context

In a cathedral, the constructed context gives the word weight and meaning. People experience the constructed space in which they move. The acoustics of a cathedral has more resonance and heightens and expands the experience. The images in cathedral windows are lit from without and impress the viewer with their lessons. The odor of cool, moist air, the direct corporeal effect of incense, the patina of old pews and steps, of cold stone, warm wood, and the shine of gold – this ensemble of synaesthetic impressions link abstract content with concrete impressions that enhance one another.
The example of the cathedral is not accidental here. The outdated architecture of the university is in many ways an extension of the monolithic church. People now need synaesthesia more than ever, but one that is different from the architecture that isolated clerics and medieval university students from the real world.

Even scholars and professionals in the arts used the metaphor of the cathedral when referring to the developing industrial culture. "Back to the building!" That's what Gropius sought in his Bauhaus Manifesto of 1919 during a time of unprecedented dynamic unfolding of productive power. As "mother" of all arts and crafts, architecture should be the power behind new developments. However, social relations are less and less determined by buildings or constructions and more and more by new phenomena, such as energy infrastructure, transportation of people and merchandise, transmission of news through wires and satellites.

As things stand

No one will deny that today's university is in bad shape. No would even care to defend its new architecture of box-like structures with bare concrete walls erected to resemble a maze. The best one can say about them all is that they reflect a lack of imagination: they reveal that university administrators, boards of directors and educators themselves have no concept of what contemporary education and science is all about. Learning is carried on as the production of added value in the hope that the university remain an economically viable institution. Those responsible do not perceive education as arising from an impulse towards knowledge, but from a need to maintain their own positions of authority. Success is viewed in relation to the number of certificates, diplomas, and titles conferred. The situation of students is comparable to hens in those egg-laying factories where the biological rhythm of hens is controlled in order to exact the maximum from them. No one has a desire to correct the un-ecological and anti-ecological effects that thousands of students suffer as they assemble in a large room, where professors mechanically give them the same material, and in laboratories, where reality is chopped into small pieces and fed to them.

As beautiful as some university campuses may be, theirs is the beauty of the cathedral, cloister, and castle of the Middle Ages. The architecture of the university buildings of Paris, Bologna, Oxford, Cambridge, Krakow, Heidelberg, and Salamanca are the expression of a particular spiritual perspective. But they are also examples of an attitude towards education. This attitude, once divorced from its architecture, is not appropriate to today's quest for learning.

A new architecture for a new way of learning

A novel dynamics of learning is in the process of invalidating the rigid structure of learning that university architecture exemplifies. Learning is becoming more flexible and decentralized as access to information and knowledge is made available at a faster rate and through interactive media. Universities should respond to these changing conditions by becoming more flexible themselves, by breaking down the barriers to learning: the towers in which educators seclude themselves from the outside world; the walls erected between disciplines; the large auditoriums in which information is delivered, but not exchanged; laboratories in which equipment quickly becomes outdated. Universities must become areas of interaction and interdisciplinarity. They must learn to interact with worldly demands in a proactive way. Just as society has become ecologically conscientious – more due to reasons of survival than to a romantic notion of living on the land – so must educators explore the alternatives to the factory that the university system has become. (Unfortunately, not even the architecture of Le Corbusier is up to this task.)

The image of dynamic structures in architecture was developed in the 1960s through the work of Superstudio and Archigram. This was as much of a political necessity as was the opening of education itself to more people. In *Learning from Las Vegas*, architecture was viewed from the perspective of driving by in an automobile: dynamic, 2-dimensional, and impressive. Today, in the age of electronic communication, network architectures will be the formative power behind society. How will acceptance be determined? Who will be able to do what with whom? And the central questions for architecture will be: How will the connection between physical presence and bodiless thinking be made? Where will learning, as a social process, find its appropriate environment? When I need direct contact with a colleague, will teleconnection be good enough? How can I access information that is not best mediated through visualization and simulation? What effect will new technology have on urban and open-space planning?

Technology is made available faster than it can be applied. The collective consciousness, however, has not yet grown sufficiently to respond to the potential presented by technology and the changes it will bring to our architecture of thought. Models still have to be developed. How should the new university architecture be created so that it facilitates interaction, access to knowledge, and the renewal of science that will have a closer relation to what is going on in real life?

Architects are using digital technology, mainly computers, in their work more and more. But neither they nor educators fully realize what it means to "be" computational or digital. It is not a matter of how many computers are bought, which software is used, or how fast a network can be accessed. The architecture of thought should not be a mere serf of current technology. It should present a challenge to it!

The new university must be more than an alternative to the outdated monolithic structure of education. It must exemplify a new architecture that functions at a new level. The question is not "How do we construct the next graduate processing plant?" but "How do we create a space for human interaction that corresponds to a reality in which knowledge is generated and regenerated in ever shorter cycles; in which new domains of knowledge are established; and in which the highest form of democracy is reflected – one that is not based on equal access to mediocrity, but to the development of free individuals through free access to learning?"